

## **ENVIRONMENTAL MONITORING REPORT FOR THE CONSTRUCTION AND OPERATION OF ANIXAS II FIRM POWER PROJECT, WALVIS BAY, ERONGO REGION**



**PERIOD: 2021 - 2024**

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# 1 INTRODUCTION

NamPower is currently extending their Anixas I power station with the construction of the Anixas II Power Station as part of their Firm Power Project (FPP) to increase the dispatchable power on the Namibian grid. The proposed FPP in Walvis Bay will include the existing 22.5 MW Anixas Power Station (Anixas I) and the extension (Anixas II) with a base case of 50 MW, which will bring the total generation capacity to 72.5 MW. The FPP location in Walvis Bay is at the existing Anixas Power Station on Erf No. 5065, 15 John Ovenstone Street (Figure 1-1). NamPower is employing similar engine technology as at Anixas I and will utilize the same transmission connection infrastructure to evacuate firm and dispatchable electrical power to the Namibian grid. Although transmission evacuation capacity exists for further generation expansion of up to 142 MW, this option is not currently considered for implementation.

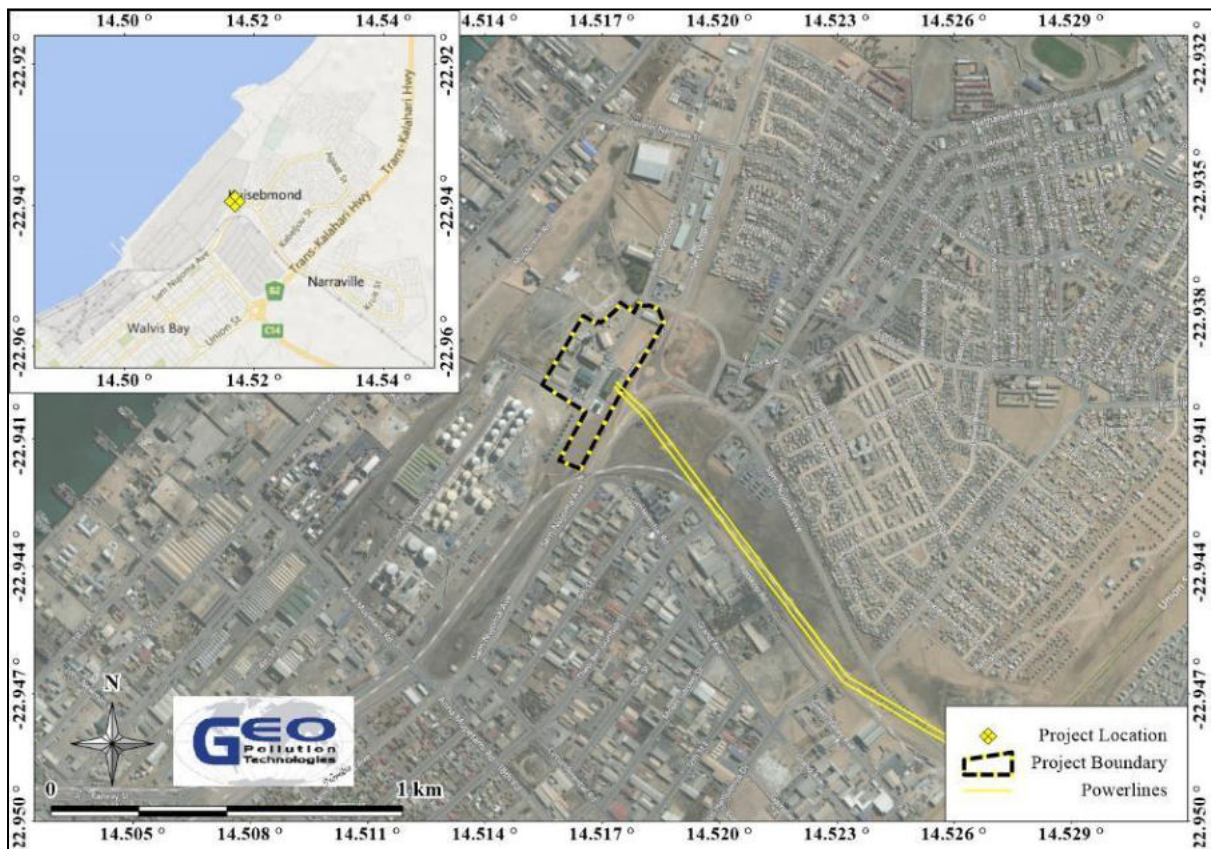


Figure 1: Project location

The technology selection for the proposed upgrade was conducted by the Technical Advisor (RINA Tech Africa), with input from environmental scientists who considered impacts associated with each technology. This included power station location, technology, and fuel options. An environmental impact assessment and submission to MEFT was conducted as per the Environmental Management Act No.7 of 2007 (EMA) of Namibia by Geo Pollution Technologies, following the technology selection process.

The Environmental Clearance for the project was provided by the Environmental Commissioner (MEFT) on 22 February 2021. The construction activities commenced in May 2022 and completion is expected in May 2024,

The aim of the environmental assessment was to determine the potential impacts of the construction, operational, and decommissioning phases of the project on the environment. The environment is defined in the Environmental Assessment Policy and Environmental Management Act as “land, water, and air; all organic and inorganic matter and living organisms as well as biological diversity; the interacting natural systems that include components referred to in sub-paragraphs, the human environment insofar as it represents archaeological, aesthetic, cultural, historic, economic, paleontological or social values”. As part of the Environmental Assessment, an Environmental Management Plan (EMP) was drafted for the activities related to the construction and operations of the facility. Mitigating measures were proposed and were included in the EMP submitted during the scoping phase.

## **2 SCOPE OF WORK**

### **2.1. Construction Activities**

Construction of the Anixas II Power Station and related infrastructure is being conducted without interfering with the operations of the existing Anixas I Power Station. Infrastructure development includes the establishment of a tank farm, fuel offloading and storage area, water tanks, workshops, powerhouse, and cooling units. Such site establishment activities constitute the construction phase. However, the definition of construction as per the attached CEMP and its regulations, includes care and maintenance activities. Most of the impacts initiated during construction will not be carried forward into the operational phase. The applicable impacts and how they are

managed is detailed in the attached Construction EMP.

## **2.2. Envisaged Operational Activities**

The Anixas II Power Station will primarily serve to supplement the electricity supply during times of energy shortages. These may include times when electricity imports are limited (regional power shortages), during transmission system outages, and when renewable power resources, such as photovoltaic and wind turbines, have reduced generation capacity under certain conditions. The latter instances typically lack sunlight (nighttime/cloudy), and calm wind conditions. The Anixas II Power Station will mainly operate as a stand-by power station for peak hours. Peaking hours are from 6:00 a.m. to 9:00 a.m. in the morning and from 6:00 p.m. to 09:00 p.m. in the evening for five days a week. Continuous operations are not foreseen for the plant. However, such an eventuality may occur for short periods (days rather than weeks or months) during an emergency, but the likelihood is very low. However, all specialist studies conducted during the EIA process incorporated the eventual continuous operational scenario for assessment purposes.

## **3 ENVIRONMENTAL IMPACTS MANAGEMENT**

The management of the environmental elements may be affected by the different activities. Impacts addressed and mitigation measures proposed are seen as minimum requirements which have been elaborated on in the project EMP and Construction EMP. Delegation of mitigation measures and reporting activities were determined by the EIA practitioner and included in the EMP. The EMP is a living document that was prepared in detail and that must be regularly updated, by the proponent or any competent party as the project progresses and evolves.

The Environmental Impact Assessment (EIA), EMP, and Environmental Clearance Certificate (ECC) were issued (22 February 2021) and communicated to the site managers. A copy of the ECC and EMP is kept on site. All monitoring results are reported as indicated according to SHEW management activities on site. Reporting is important for any future renewals of the ECC and is submitted to the Ministry of Environment, Forestry, and Tourism during renewal. Renewal of ECC will require six monthly reports based on the monitoring prescribed in this EMP.

#### 4 IMPACT MANAGEMENT MEASURES

The following section provides management measures for both the operational phase as well as construction activities related to the project. This report will focus on the construction phase as the operational phase has not commenced yet. To manage impacts, an assessment to determine the severity of impacts was conducted. Once determined, appropriate and relevant management measures may be proposed. Assessment of impacts was conducted according to assessment criteria.

For each impact, an environmental classification was determined based on the Rapid Impact Assessment Method as developed by Pastakia (Pastakia, 1998). Based on this method environmental impacts were assessed according to the following categories (see Table 4 1 to Table 4 5):

- importance of condition (A1) – assessed against the spatial boundaries of human interest it will affect.
- magnitude of change (A2) – the measure of scale in terms of benefit/disbenefit of impact or condition.
- permanence (B1) – defines whether the condition is permanent or temporary.
- reversibility (B2) – defines whether the condition can be changed and is a measure of the control over the condition, and
- cumulative nature (B3) – reflects whether the effect will be a single direct impact or will include cumulative impacts over time, or synergistic effect with other conditions. It is a means of judging the sustainability of the condition.

Environmental Classifications are then calculated =  $A1 \times A2 \times (B1 + B2 + B3)$  The environmental classification of impacts is provided in Table 5-6.

The probability ranking refers to the probability that a specific impact will happen following a risky event. These can be improbable (low likelihood); probable (a distinct possibility); highly probable (most likely); and definite (impact will occur regardless of prevention measures).

*Table 1: Assessment Criteria - Importance of condition (A1)*

Criteria	Score
Importance to national/international interest	4
Important to regional/national interest	3

Important to areas immediately outside the local condition	2
Important only to the local condition	1
No Importance	0

*Table 2: Assessment Criteria - Magnitude of change/effect (A2)*

<b>Criteria</b>	<b>Score</b>
Major positive benefit	3
Significant improvement in status quo	2
Improvement in status quo	1
No change in the status quo	0
Negative change in status quo	-1
Significant negative disbenefit or change	-2
Major disbenefit or change	-3

*Table 3: Assessment Criteria - Permanence (B1)*

<b>Criteria</b>	<b>Score</b>
No change/Not applicable	1
Temporary	2
Permanent	3

*Table 4: Assessment Criteria - Reversibility (B2)*

<b>Criteria</b>	<b>Score</b>
No change/Not applicable	1
Reversible	2
Irreversible	3

*Table 5: Assessment Criteria - Cumulative (B3)*

<b>Criteria</b>	<b>Score</b>
Light or No Cumulative Character/Not applicable	1

Moderate Cumulative Character	2
Strong Cumulative Character	3

*Table 6: Environmental Classification (Pastakia 1998)*

<b>Environmental Classification</b>	<b>Class Value</b>	<b>Description of Class</b>
72 to 108	5	Extremely positive impact
36 to 71	4	Significantly positive impact
19 to 35	3	Moderately positive impact
10 to 18	2	Less positive impact
1 to 9	1	Reduced positive impact
0	-0	No alteration
-1 to -9	-1	Reduced negative impact
-10 to -18	-2	Less negative impact
-19 to -35	-3	Moderately negative impact
-36 to -71	-4	Significantly negative impact
-72 to -108	-5	Extremely negative Impact

#### **4.1. Training and Induction**

Before the construction phase, induction sessions were conducted for all Employees and contractors onsite and regularly repeated as the project progresses. Some records of inductions are attached. Toolbox talks were/are conducted before the start of a new activity on site (see appendices)

#### **4.2. Waste Management**

Waste generated during the project was disposed of at approved dump sites and disposal certificates for hazardous substances etc. are attached for record keeping.

#### **4.3. Monitoring**

Monitoring was conducted by NamPower 's Environmental Consultant during the construction through monthly and quarterly audits and sample audit reports are attached. In addition NamPower's SHEW department conducts yearly audits on the project. During



the Operational phase, all notable deviations from the EMP will be communicated as per the relevant laws by the contractor for corrective action to the Environmental custodian (MEFT) as well as the Ministry of Mines and Energy (MME) as provided by the relevant laws. Impacts and aspects registers are compiled and kept on site.

## **5. VEHICLE AND EARTHMOVING EQUIPMENT**

Construction vehicles were inspected, as well as confirming service records, road-worthiness, and operator certificates during site inspections. Transportation of Engines on public roads was done in accordance with the local Road and Traffic Management Act No.22 of 1999.

## **6. PROTECTION OF FLORA AND FAUNA**

Impact to both surface and underground living species is managed by following international best practices and the quality of these practices is upheld by compliance to the International Organization for Standards (ISO) as Anixas I has ISO 9001 certification. Waste generated is taken care and accumulation of waste on-site for a long period is avoided to prevent consumption by sea birds. There have been no recorded incidents of environmental pollution to date.

## **7. RELATION WITH COMMUNITY, MEDIA, AND GENERAL PUBLIC**

Relations with the community and other stakeholders remain cordial. No stakeholder complaints were lodged during the period under review. Media queries were attended to in accordance with ethical cooperate communication principles to prevent negative public impacts. An official grievance reporting procedure is available on the Proponent's website for the project.

## **8. CONCLUSION AND RECOMMENDATIONS**

The overall environmental management on site is good. Inspections are conducted and environmental concerns and improvement opportunities will be discussed during project progress meetings if any. Access to the site is controlled and only accessible via the applicable access permit holder and full completion of Safety, Health, Environmental, and Wellness (SHEW) inductions.

## 9. PHOTOGRAPHIC CONSTRUCTION SITE REPORT 19 SEPTEMBER 2023



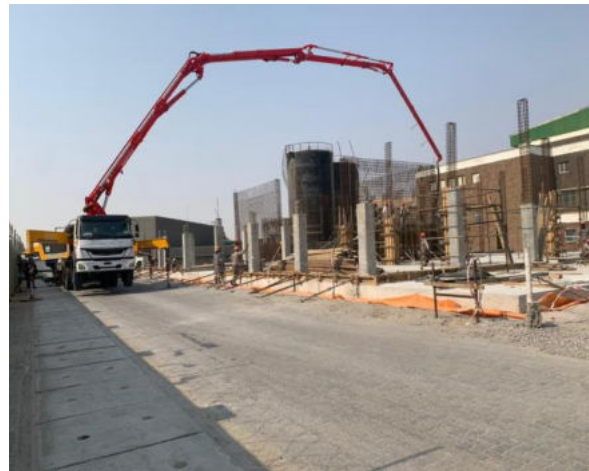
Picture 1: Dangerous good delivery



Picture 2: Crane operation on-site



Picture 3: Progress on the Workshop



Picture 4: Progress on the Workshop building



Picture 5: Progress on the Powerhouse and installations



Picture 6: Progress on the Tank farm

## **10. LIST OF APPENDICES/ATTACHMENTS**

- Existing ECC
- Anixas EMP
- ECC application form
- Locality map
- Anixas II monthly monitoring report
- Construction Environmental Management Plan (CEMP)
- Induction Registers
- Toolbox Talk Registers
- Aspects and impacts register
- Contractor SHEW audit (Feb 2023)
- Waste safe disposal certificates